Technical Accomplishments

Rotorcraft Program

Safe All-Weather Flight Operations for Rotorcraft

Untethered Head Mounted Display Technologies

Dr. James Larimer

September 2001

Milestone Completed

Relevant Milestone: Demonstrate untethered display COTS devices. (Project SAFOR # 5 due Sep 01)

Shown: An untethered head tracked head mounted display (HMD) has been integrated into the Riptide Simulator.

Accomplishment / Relationship to Milestone and ETO:

- On track to complete the milestone. A light weight, low power, minimally obstructing, untethered HMD has been installed in a research simulator environment. Development of a light weight low power untethered visual control interface for monitoring system status and navigational information has been a technical challenge. HMD devices restrict pilot mobility, and can obscure the pilot's field of view, reducing situational awareness and putting the pilot at risk for an accident. The utility of the display is driven by its ability to provide pilots with broadband visual information in a non obstructing manner. Obstructions to the natural head related field of view and ease of egress and limited information content, have all been serious barriers to deploying HMD technology. The prototype installation in a research simulator will support empirical investigation of the limitations of HMD technology to meet task needs.

Future Plans:

- Active matrix thin film transistor technology support active decompression of the image signal within the display device. 1) Determine performance limits with respect to reconstruction of a motion signal. 2) Develop embeddable algorithms for signal up-sampling and decoding.

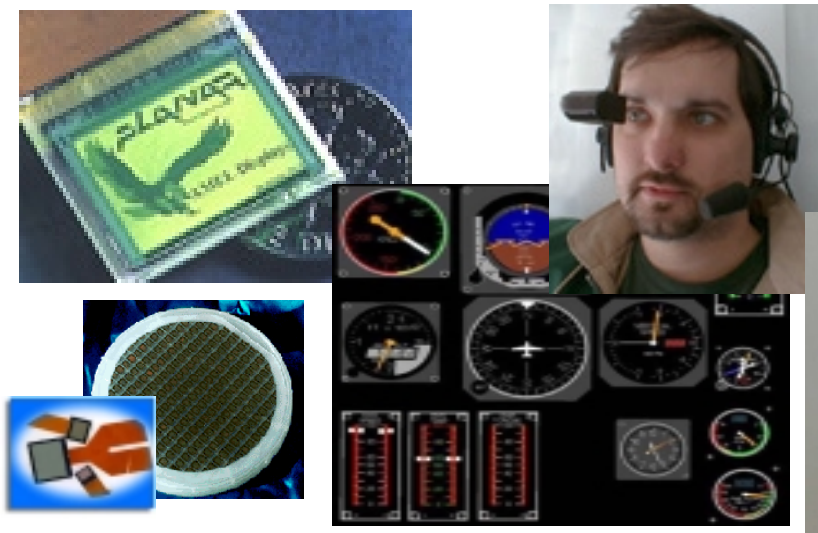
ETO: Safety

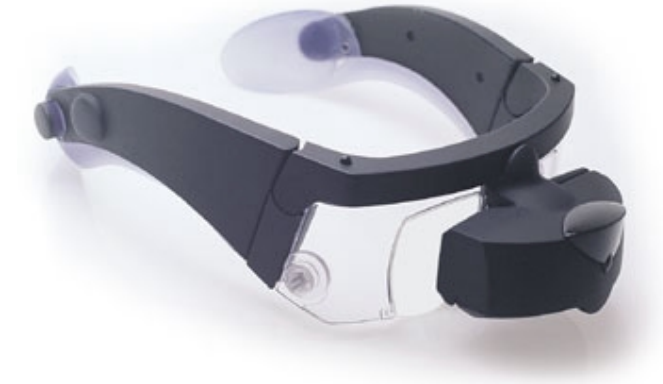
Technical Accomplishments

Rotorcraft Program

Safe All-Weather Flight Operations for Rotorcraft

On-track for Sep 01 milestone completion!





Milestone Completed